"GENETICALLY ENGINEERED VEGETABLES: ARE THEY WORTH IT?"

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CONTACT: Linda McCandless, llm3@cornell.edu, 315-787-2417

by Linda McCandless

SYRACUSE, NY: Are genetically engineered vegetables environmentally friendly or ecologically threatening? Future foods or frankenfoods? The key to preventing starvation in Third World countries? Good business? Stupid science? Sustainable? Unsustainable?

These and other questions were addressed in a four-hour forum held February 7 during the New York State Vegetable Growers Association's annual conference. The event, which organizers believe was one of the first to air both sides of the GMO (genetically modified organism) controversy in a grower setting, was attended by over 100 growers, processors, and agricultural scientists.

The six presenters at the Becker 2000 Forum offered multiple perspectives on the topic: "Genetically Engineered Vegetables: Are They Worth It?" The six included two genetic plant breeders from Cornell University, a seed company representative for the controversial Bt sweet corn, a vegetable processor who has decided to drop Bt corn from its 2000 line, a consumer advocate, and a crop production researcher concerned about trade policies.

"The goal of the forum was to educate growers about the potential risk and benefits of genetically engineered crops in their planting and marketing schemes, help increase their understanding of the basic science and technologies involved, and increase their ability to answer questions from concerned consumers," said Anu Rangarajan, a statewide specialist in fresh market vegetable production, and Cornell University professor of vegetable science, who organized and moderated the forum.

US farmers have been placed squarely in the middle of the debate between seed dealers, chemical companies, American trade policy, and foreign and domestic consumers on the GMO issue. A recent survey conducted by the American Corn Growers Association, indicated a significant reduction in the acreages of Roundup Ready corn, Bt corn, and Roundup Ready soybeans being planned for the 2000 season, largely because of consumer concerns. Currently, there are only two commercially available genetically engineered

vegetables: Bt sweet corn and a virus resistant squash.

Steve Kresovich, who is in a Cornell plant breeder and director of the Institute of Genomic Diversity, talked about scientific and environmental considerations. "His explanation of conventional breeding versus genetic engineering, was most valuable to me," said one grower. "I didn't realize how many intentional and unintentional consequences they were in both types of breeding."

Dennis Gonsalves, plant pathologist at Cornell's New York State Agricultural Experiment Station, in Geneva, NY, who is responsible for the commercialization of two virus resistant crops in the US-papaya and squash-outlined the 15-year project that led to the revitalization of the papaya industry in Hawaii. "Through the introduction of genetically engineered papaya that is resistant to the papaya ringspot virus, farmers whose livelihoods were ruined have now been able to replant," said Gonsalves. "If you ask them if this is a successful technology, they and their families will say 'yes'."

Michael Hansen, of the Consumers Union, advocated caution on the part of the consumer. "In the US at least, there is virtually no regulation of genetically engineered crops on the part of the FDA, the EPA and the USDA," said Hansen. According to Hansen, health risks included transfer of toxins, allergins, antibiotic resistance, and a change in nutrient levels-many of which are unintentional and untested risks. He advocated mandatory labeling so consumers can decide for themselves which products to buy.

Tom Facer, of Agrilink Foods, outlined the processor's decision to drop Bt sweet corn from their product line in 2000. "It's not that the technology doesn't work," he said, citing as an example the state of Georgia, where 10-12 pesticide sprays are usually required to get a no-worm corn crop. "In 1999, we grew 1000 acres of Bt corn in 1999 with no spray," he said. But the monarch butterfly study at Cornell is a hot-button topic with consumers, and the unknown fall-out from the controversial subject with consumers does not justify the risk of producing GMO varieties in 2000 while conventional pest control measures are available, he said.

Mark Mason, Bt sweet corn product manager for Novartis, which sells Attribute (Bt) corn, presented convincing numbers on the GMO's efficacy. "Consumers are not very well informed," he said. "Fears are more easily communicated than the facts." Novartis will continue to study effective insect management strategies, including the use of GMOs.

Ann Clark, professor of pasture and grazing management in the Department of Plant Agriculture at the University of Guelph, spoke about the impact of biotechnology on the marketing of agricultural crops. There are two opposing visions, she said. "On the one hand, industry proponents foresee a bright and boundless future, once consumers come to their senses. On the other, the international banking community, food industry, other governments and the Rockefeller Foundation foresee a much diminished future because consumer concerns are here to stay." Her concern is that "farmers are being misled into believing that genuine concerns about ecological and food safety risks of transgenic crops are just trade barriers and hysteria."

Her advice? "This is not the year to grow GM crops," she said. "This is a technology that has been brought prematurely to market." She said, although there is no evidence that GM foods are unsafe, neither is there evidence that GM foods are safe, and she advocates more testing.

The forum was occasionally contentious but exchanges were fair and the audience keen to listen to the dialogue occurring among opposing camps. The discussion was frequently amplified by Rangarajan, who proved adept at asking speakers to clarify their statements and define their terms.

The next step? "Cornell Cooperative Extension should play an important role in developing educational materials for growers and consumers," said Rangarajan. "We would like to take this forum on the road to local communities and farmers' markets in New York."

The forum was sponsored by Cornell Cooperative Extension in cooperation with the NYS Vegetable Growers Association, Inc., and the Empire State Potato Growers, Inc.